

REMARKS

Drawings

New Figure 6 shows the features recited in Claim 24, namely "a plurality of predefined objectives selectively positionable in said illumination beam path." Since the matter included in new Figure 6 was included in Claim 24 as filed, no new matter has been added. Entry of Figure 6 in a favorable light is respectfully requested.

Claim Rejections - 35 U.S.C. §112

Claims 24, 25, and 30 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and claim what applicant regards as the invention. Claim 30 has been cancelled, making the present rejection moot in regards to Claim 30. To the extent that the rejection may apply to newly amended Claims 24 and 25, the rejection is respectfully traversed for the following reasons.

Claims 24 and 25 have been amended to state that they comprise structure operatively arranged to perform functions described in the specification. Page 3, lines 12-17 and the amendment to page 6 of the specification describe the functions performed by the structure claimed in Claims 24 and 25. Now that Claims 24 and 25 have been put in proper structural form, applicant believes Claims 24 and 25 are in condition for allowance, which action is respectfully requested.

Claim Rejections - 35 U.S.C. §102

Claims 17, 24, 25, 30, 32, 33, and 39 stand rejected under 35 USC 102(b) as being anticipated by Yamamoto (United States Patent No. 5,184,012). To the extent that the reject may apply to newly amended Claim 17, the rejection is respectfully traversed for the following reasons.

Claim 17 has been amended to recite, "a point-like light source operatively arranged to emit an illumination beam along said illumination beam path." Yamamoto discloses a laser source 1 that is not a point-like source. Thus, Yamamoto does not disclose each and every element of Claim 17. Therefore, Claim 17 is not anticipated by Yamamoto.

Claim 17 has also been amended to recite, "a focus of the zoom optical system remains at a location of said point-like source." The Examiner has cited optical beam diameter changing system 30 of the device disclosed by Yamamoto as a zoom optical system. Figures 3A and 3B show that the focal point of system 30 is at infinity for any configuration of system 30. Thus, not only does Yamamoto not disclose a point-like source, but Yamamoto also does not disclose a zoom optical system whose focus remains at the location of a point-like source. Since Yamamoto does not disclose every element of Claim 17, Claim 17 is not anticipated by Yamamoto.

Claims 24, 25, 32, 33, and 39 are dependent on a Claim 17 and include all of the limitations thereof. Consequently, Claims 24, 25, 32, 33, and 39 are respectfully argued to be allowable for the reasons presented above concerning Claim 17.

Claim 30 has been cancelled, making the present rejection moot with respect to Claim 30.

In view of the foregoing, withdrawal of the rejection of Claims 17, 24, 25, 32, 33, and 39 under 35 U.S.C. §102 is respectfully sought.

Claim Rejections - 35 U.S.C. §103

Claims 22 and 23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Takagi et al. (United States Patent No. 5,140,458). The rejection is respectfully traversed for the following reasons.

Claims 22 and 23 both depend, directly or indirectly, from Claim 17. Consequently it is respectfully urged that these claims are allowable for the reasons stated above with respect Claim 17.

Claims 28 and 29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto with or without Dabbs et al. (United States Patent No. 5,054,926). The rejection is respectfully traversed for the following reasons.

Claims 28 and 29 both depend directly from Claim 17. Consequently it is respectfully urged that these claims are allowable for the reasons stated above with respect Claim 17.

Claims 34-36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Kato (United States Patent No. 4,530,578). The rejection is respectfully traversed for the following reasons.

Claims 34-36 all depend indirectly from Claim 17. Consequently it is respectfully urged that these claims are allowable for the reasons stated above with respect Claim 17.

Claim 37 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Kato with or without Kain (United States Patent No. 5,672,880). The rejection is respectfully traversed for the following reasons.

Claim 37 depends indirectly from Claim 17. Consequently it is respectfully urged that this claims is allowable for the reasons stated above with respect Claim 17.

Claims 38 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Dreessen et al. (United States Patent No. 5,404,238). The rejection is respectfully traversed for the following reasons.

Claim 38 has been amended to recite, "a point-like light source operatively arranged to emit an illumination beam along said illumination beam path." Yamamoto discloses a laser source 1 that is not a point-like source. Dreessen discloses Xenon flashtube 20 as a light source, which is also not a point-like source. Neither Yamamoto nor Dreessen teach, motivate, or suggest the combination use of a point-like source with the device disclosed in either reference, or with any other device. Thus, Claim 38 would not have been obvious to one with ordinary skill in the art at the time the invention was made.

Claim 38 has also been amended to recite, "a focus of the zoom optical system remains at a location of said point-like source." The Examiner has cited optical beam diameter changing system 30 of the device disclosed by Yamamoto as a zoom optical system. However, as stated above, Yamamoto does not, teach, suggest, or motivate a zoom optical system wherein the focus of the system remains at the location of a point-like source. Dreessen does not teach, suggest, or motivate a zoom optical system as claimed in Claim 38. Further, neither cited reference contains

a teaching, suggestion, or motivation to combine its teaching with any other reference to arrive at the invention claimed in Claim 38.

In view of the foregoing, withdrawal of the rejections of Claims 22, 23, 28, 29, and 34-38 under 35 U.S.C. §103 is respectfully sought.

Conclusion

It is respectfully urged that the present application is in a condition for allowance, which action is respectfully requested.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

The paragraph beginning at page 3, line 19, is amended as follows:

- ~ In terms of concrete potential applications of the optical arrangement according to the present invention, it is conceivable for the illumination optical system to be arranged downstream from a point source or an optical fiber. The illumination optical system could be embodied as a parallelizing optical system with [a fixed focal intercept but variable focal length,] the beam diameter being adaptable to the entry pupil of the objective.

The paragraph beginning at page 3, line 26, is amended as follows:

It is also conceivable for the illumination optical system to be embodied as an expanding optical system for a preferably directly coupled-in laser beam. [In this context the beam could be variably expandable in accordance with the ratio f_1/f_2 of the focal lengths.]

17. (amended) An optical arrangement in an illumination beam path of a confocal laser microscope [, said optical arrangement] comprising:

a point-like light source operatively arranged to emit an illumination beam along said illumination beam path; and,

an illumination optical system arranged in said illumination beam path for modifying an illumination diameter of [an] said illumination beam of said microscope, wherein [the] said

illumination optical system is a zoom optical system which operates steplessly and a focus of the zoom optical system remains at a location of said point-like source.

24. (amended) The optical arrangement according to claim 17, wherein said microscope includes a plurality of predefined objectives selectively positionable in said illumination beam path, and said illumination optical system is operatively arranged to modify [modifies] said illumination diameter to match an [the] entry pupil of a selected one of said plurality of objectives.

25. (amended) The optical arrangement according to claim 25, wherein said illumination optical system is operatively arranged to automatically [modifies] modify said illumination diameter.

38. (amended) An optical arrangement in an illumination beam path of a confocal laser microscope [, said optical arrangement] comprising:

a point-like light source operatively arranged to emit an illumination beam along said illumination beam path;

an illumination optical system arranged in said illumination beam path for modifying an illumination diameter of [an] said illumination beam of said microscope, wherein [the] said illumination optical system is a zoom optical system which operates steplessly and a focus of the zoom optical system remains at a location of said point-like source; and,

an additional input whereby a laser light beam from a further light source can be coupled in to said illumination beam path via an additional input and is adaptable to an entry pupil of an objective of said microscope with no adaptation of [the] said actual illumination beam path.